the parasite. These storage materials are the same as those found in other parts of the plants except that they have a much higher concentration.

SWANTON[11] describes a mite gall on *Geranium lucidum* caused by *Eriophyes geranii canestrini*. This gall does not occur on other species of *Geranium* on the British Islands, but does occur on three other species on the continent. *E. rubiae* Can. attacks the apical leaves of *Rubia peregrina*, causing them to appear as flowers.

In the American literature we note a new species by COCKERELL[12] under the name of *Cecidomyia peritomatis*. This is especially interesting because of the very few galls known on Capparidaceae.

A very interesting paper by WHITE[13] on the bearing of teratological development in *Nicotiana* on the theories of heredity begins with a brief review of our knowledge of teratology. The mutant of *Nicotiana tabacum* was obtained from Alquiza, Cuba, in 1907. The malformation consisted of a flattened stem accompanied by many smaller teratological features, especially in the flowers. Five generations, involving more than 1000 plants, have been grown, each individual showing the original mutant characters which are shown in tables. The results of his experimental work are summarized as follows: "From the results of hybridization and selection, one may draw the conclusion that the fasciated mutant differed from the normal parent strain by only one factor, and that it represents a mutation upon the variability of which selection has no modifying effect. The character appears to be due to the one underlying cause, and its variableness is only the external manifestation of the capricious working of that cause." The author also gives a very interesting and suggestive discussion of the cytology of the mutant and the normal, which he concludes by saying that "the evidence warrants one in the suggestion that chromosomes are characters of the zygote and gametophyte, on the same development with other plant characters."—MEL. T. COOK.

Araucarineae.—THOMSON[14] has made a detailed study of the anatomy of the araucarians, and has reached certain conclusions in reference to the affinities of this much discussed group. He has taken into account leaf gaps, leaves, pitting of secondary tracheids (including bars of Sanio), resin tissue, medullary rays, bast and periderm, annual ring and tangential pitting, and fossil forms. The recent discussion concerning the origin of the araucarians has presented

[11] SWANTON, E. W., New and rare British plant galls. Jour. Botany **50**:283, 284. 1912.

[12] COCKERELL, T. D. A., A new gall on *Peritoma serrulatum*. Jour. Econ. Entomol. **6**:279, 280. 1913.

[13] WHITE, O. E., The bearing of teratological development in *Nicotiana* on the theories of heredity. Amer. Nat. **47**:206–228. 1913.

[14] THOMSON, ROBERT BOYD, On the comparative anatomy and affinities of the Araucarineae. Phil. Trans. Roy. Soc. London B **204**:1–50. *pls. 1–7*. 1913.

two alternatives: derivation from the lycopods, suggested by SEWARD; or derivation from the Abietineae, supported by JEFFREY. THOMSON dissents from both, and concludes that the araucarians have been derived directly from the Cordaitales. The objection to a lycopod origin is based chiefly upon the presence of leaf gaps, which THOMSON regards as of fundamental importance in indicating an origin by way of the fern stock.

The objections to derivation from the Abietineae deal with many details, the pith of them being that in the various anatomical details used araucarians resemble Cordaitales more than they do Abietineae. JEFFREY has appealed to the Mesozoic plexus of "Abietinean-Araucarian" forms as indicating the origin of araucarians from the Abietineae; but THOMSON concludes that these transition forms indicate that Abietineae have been derived from the araucarians, and he claims that this conclusion is confirmed by the fact that the araucarians are of greater geological age than the Abietineae. This last statement is based upon the fact that THOMSON and ALLIN[15] investigated certain Permian and Carboniferous forms that had been referred to *Pityoxylon* and found that they do not belong to Abietineae.—J. M. C.

Marine flora of Woods Hole.—For a number of years DAVIS has been studying the marine flora of Woods Hole and vicinity, part of the time in connection with the biological survey of the Bureau of Fisheries. The results have now appeared in two sections[16] of a bulletin of the Bureau of Fisheries, and represent the most complete study of our marine algal flora up to this time. The first section deals with the ecology of the flora, such factors being discussed as the coast, the bottom in deeper water, the tides and tidal currents, the effect of ice, depth of water, light, temperature and seasonal changes, and salinity of the water. The characteristic algal associations are described, their number reaching 57. Special reports are also made on the algae of Spindle Rocks, Woods Hole Harbor, and on the distribution of the marine algae in the deeper waters of Buzzards Bay and Vineyard Sound. This section is accompanied by 47 descriptive charts.

The second section is a catalogue of the marine flora, the number of forms enumerated, with data concerning their distribution, being as follows: Cyanophyceae 37, Chlorophyceae 52, Phaeophyceae 74, Rhodophyceae 96.—J. M. C.

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[15] THOMSON, R. B., and ALLIN, A. E., Do the Abietineae extend to the Carboniferous? BOT. GAZ. **53**:339–344. 1912.

[16] DAVIS, BRADLEY MOORE, General characteristics of the algal vegetation of Buzzards Bay and Vineyard Sound in the vicinity of Woods Hole; also A catalogue of the marine flora of Woods Hole and vicinity. Bull. Bur. Fisheries **31**:443–544, 795–833. 1911.